

Textured coating powders

Important information on use of textured coating powders

Textures

In addition to coating powders with smooth surfaces, there are also coating powders with textured surfaces. Based on their visual appearance, these textures can be divided in two categories, i.e. coarse and fine textures.

The coarse-texture category includes various variants, from finer and less distinct textures to coarse and highly three-dimensional textures.

Fields of Application

Typical applications of coating powders with coarse textures include applications where a robust appearance is required and / or surface unevenness is to be covered. Examples include machines, electrical cabinets, luminaires, vending machines, safes, cash boxes, etc.

Fine-textured coating powders have a finer appearance. This means that their surface unevenness covering capability is significantly lower. In addition to the applications mentioned above, fine textures are used, for example, for computer cases, store and trade fair design, garden furniture and equipment, leisure equipment, etc.

Parameters influencing the texture

The four most important parameters influencing the texture of coarse-texture coating powders are the film thickness, type of application, cur-

ing conditions and cleanness of the substrate.

Film thickness:

The thinner the film is, the finer the coarse texture will be. Depending on the texture parameters, the texture can become porous and the substrate may shine through depending on the color. Thicker layers will result in coarser textures, but if the layers are very thick (overcoating) the texture may become flatter again. In the case of coarse textures, a layer thickness of 70 to 90 µm can be recommended as a general rule.

The quality of coating powders with a fine texture doesn't normally depend on the layer thickness to such an extent. Generally, a layer thickness of 60 to 80 µm can be recommended.

Application:

If applied by means of tribo techniques a slightly flatter texture will be obtained compared to corona application.

Curing conditions:

If the curing temperatures are too low, the coarse texture will be less distinct, i.e. the better the cross-linking is, the more distinct the texture will be. If, in practice, the surface texture is not distinct enough, the prevailing curing conditions must be checked in any case by recording furnace curves. If necessary, the conditions must be adjusted to

the specifications in the relevant Technical Data Sheet.

The same effect may occur in the case of low heating rates. This often happens in the case of thick-walled parts. In this case, the heating rate should be increased by increasing the furnace temperature.

For such situations, we generally recommend using low temperature (NT) textured coating powders.

Cleanness of substrate:

Substrate soiling, such as grease, oil, pretreatment residues, may be another reason why the coarse texture quality is reduced or even lost. In many cases, precautionary manual degreasing will indicate if pretreatment needs to be optimized.

Colors and gloss grades

Generally, textured coating powders can be produced in the same colors as smooth coating powders. Metallic hues which, as coarse-textured coating powders, typically have an antique effect are an exception. If the proven metallic appearance is still required, it can be obtained by using a two-layer build-up (e.g. Coarse-Texture Clear Paint NT Polyester Powder PE 5923.-.0011 plus a suitable smooth top paint). If you compare textured surfaces to smooth templates from a color-metrical point of view, the tolerance values according to "VdL (=Verband

der Lackindustrie) Directive Color Tolerances (VdL-RL 10)" are multiplied by a factor of 1.3.

In the case of textured coating powders, the gloss measurement is affected by the surface texture, in so far as the measured value is lower than the optical appearance might suggest due to diffuse light scattering effects. This is why such gloss measurements are generally not carried out. In order to exclude misinterpretation, the required gloss grade must be adjusted using reference sheets. Alternatively, a rough classification using gloss grade levels (e.g. silk-matt, glossy, etc.) is possible.

Surface sensitivity

Coarse coating powders are much more sensitive to other coating powders. Due to the different surface tension, compared to smooth paints, foreign particles will be more likely to float on the surface and the resulting dispersion effect will be relatively high. As a consequence, impurities will be much more likely to be seen.

This is why the "cleanness" factor must be taken into consideration particularly.

In addition to contamination by other coating powders, raw material effects may also have a negative effect on the appearance. Such surface defects are referred to as "CAB pits" (Cellulose Aceto Butyrate = texturing additive). These pits are slightly brownish and occur sporadically.

Having optimized the powder paint manufacturing process,

we are now able to reduce occurrence of these pits significantly. However, they cannot be fully excluded.

In practice, a slight reduction of the curing temperature (within the tolerance range specified in the relevant Technical Data Sheet) may help to suppress this phenomenon.

Overcoating

Double-coating with textured coating powders generally has only a very low influence on the appearance of the texture compared to single coating.

In order to ensure optimum layer adhesion we recommend rubbing down the surface before applying the second coat.

Options / solutions

Three variants are recommended to generate coarse-textured surfaces which are available on short notice.

1. "Texture on smooth"
In this variant, any coatable, smooth coating powder is coated with a coarse-texture clear paint, e.g. NT Polyester Powder PE 5923.-.0011.

Minor color changes must be tolerated in this variant.

2. "Smooth on texture"
In this case, a coarse-texture clear paint, e.g. NT Polyester Powder PE 5923.-.0011 is coated with any type of smooth coating powder.

In this variant, a slightly flatter texture must be tolerated compared to the very distinct texture of the clear paint.

3. "Texture by cold mixing (Dryblend)"

The two product series Universal Polyester Powder 5918/5919 are coarse-textured coating powders which are available at short notice. These products are universally usable textured coating powders (also refer to Technical Information and Technical Data Sheets of products 5918, 5919).

Note

This Technical Info is based on intense development work and many years of practical experience. The contents do not constitute any contractual relationship. The user/buyer is not released from its obligation to test our products for suitability for the intended application. In addition to that, our General Terms and Conditions shall apply.

As soon as a new edition of this Technical Data Sheet is issued, the previous specifications will become invalid.

If you need more information, please consult your Brillux contact.

Version 1

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